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ASH RUST

E. L. Barnard

Rust diseases of forest and shade trees are common. Cronartium rusts of pines (e.g., fusiform rust, eastern gall rust, southern cone rust) and Gymnosporangium rusts of junipers and related conifers (e.g., cedar-apple rust) are among those better known to southern foresters and many casual observers. Ash rust, caused by the fungus Puccinia sparganioides Ell. & Barth. (= P. peridermiospora Arth.), on the other hand, is one of many more obscure rust diseases affecting trees, and is largely unfamiliar to the untrained observer.

Puccinia sparganioides is distributed throughout most of eastern North America and has also been reported from Brazil (1,6,8). In Florida, this fungus has been reported on all of its known host genera; the pycnial and aecial stages occurring on Fraxinus spp. (ash) and Forestiera spp. (swamp- and Florida-privets), the uredial and telial stages occurring on Spartina spp. (cordgrass).

In general, ash rust is not of economic significance. However, infections have occasionally resulted in widespread defoliation of white ash (Fraxinus americana L.) in natural stands, urban settings, and nurseries in parts of eastern Canada (4, 5). Severe damage has also been reported on ashes in South Dakota (3). Indeed, rust-induced defoliations occurring over two or more successive years have reportedly contributed to the decline and death of some trees (5).

Fig. 1. Leaf distortion, petiole hypertrophy and aecial sporulation resulting from infections of Puccinia sparganioides on green ash. (DPI Photo #702738)

DESCRIPTION OF THE DISEASE. P. sparganioides infects Fraxinus and Forestiera spp. on the current season's growth resulting in conspicuous swellings on twigs and leaf petioles as well as the distortion and necrosis of infected leaves. Distinctive pycnia and aecial "cluster cups" with orange-yellow aeciospores eventually proliferate on the surface of infected tissues (Fig. 1). Pycnia are typically epiphyllous (i.e., on upper leaf surfaces) while aecia are typically hypophyllous (i.e., on lower leaf surfaces) or produced on hypertrophied petioles (1,2,8). These symptoms and fungal signs are most likely to be detected in Florida during April and May (Fig. 2).

[1]Forest Pathologist, Divisions of Forestry and Plant Industry, P. O. Box 1269, Gainesville, FL 32602.

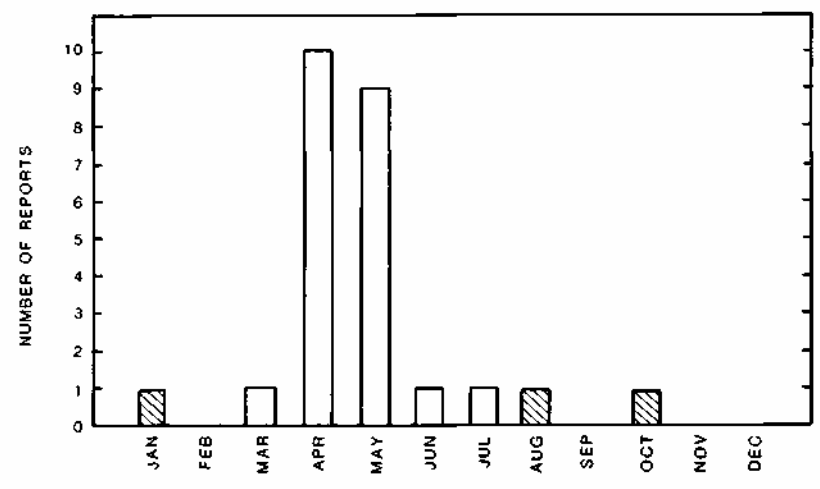

Fig. 2. Reports of symptoms and/or sporulation resulting from Puccinia sparganioides infections on Fraxinus and Forestiera spp. □(pycnial and aecial stages) and Spartina spp. ▨ (uredial and telial stages)—from Division of Plant Industry, Plant Pathology files. (DPI photo #702747)

CONTROL. Control of ash rust is generally unwarranted, especially in Florida where infections have been infrequent and inconsequential to date. Presumably, some degree of control might be achieved by controlling the growth of alternate host Spartina spp. (mowing, burning, herbicides, etc.) near valuable plantings of Fraxinus or Forestiera spp. (e.g., nurseries, ornamental settings). Partial control has been reported feasible with Bordeaux mixture, ziram, and other fungicides (7).

SURVEY AND DETECTION. On Fraxinus and Forestiera spp., look for distinct twig and petiole swellings, leaf distortion and necrosis, and associated orange-yellow fungus spores in April and May.

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